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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,694

09/07/2007

Toshio Yoshihara

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EXAMINER

ROBINSON, ELIZABETH A

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/594,694	<b>Applicant(s)</b> YOSHIHARA ET AL.	
	<b>Examiner</b> Elizabeth Robinson	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9-28-2006, 12-19-2006</u>                                     | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification lacks antecedent basis for the limitation that the fine particles are not fully wetted with water as in claim 4. The specification further lacks antecedent basis for an alkaline liquid composition having a pH value of 9 or higher as in claim 22. While the specification does teach no change in properties for treatment with a weakly alkaline cleaner (Paragraph 118 and Tables 1 and 2), there is no teaching of the pH of this cleaner or that the lack of change would be applicable for higher pH values. There is also lack of antecedent basis in the specification for a test with water as in claim 22. A tea solution is used in Paragraph 122, but this is not water, and the only property change measured was reflectance, not transmittance or scratch resistance.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

**Claims 3, 21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Claim 3 recites the limitation "treatment for hydrophilizing the fine particles" in line 2. There is insufficient antecedent basis for this limitation in the claim. The particles of claim 1 from which this claim depends are made hydrophobic not hydrophilic. The Examiner is interpreting that the treatment is to make the particles hydrophobic.

Regarding claim 21, it is unclear how if the antifouling layer can provide its function if it is provided on the surface of the light transparent base remote from the low-refractive index layer. In the instant specification (Paragraph 97), the coating is provided to prevent the fouling of the outermost surface of the low-refractive index layer, but then states the layer arrangement of claim 21. It appears that the layers have been switched and that it should read that the antifouling layer is provided on the low-refractive index layer remote from the light transparent base as it is shown in Example 3 of the instant specification. The Examiner is interpreting the claim in this manner.

Regarding claim 22, the conditions of the wiping of the laminate are not claimed. It is unclear what duration and amount of liquid and what wiping force the laminate is required to sustain.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-8, 10-12, 14 and 16-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakamura et al. (US 2003/0202137).**

Regarding claims 1 and 3, Nakamura (Paragraphs 116-125) teaches an antireflection film comprising a transparent support (3) and low refractive index layer (2) that is provided on the outermost surface of the high refractive index layer (1). The low refractive index layer comprises fine particles (Paragraphs 192-193) having an average particle size of 0.5 to 200 nm, most preferably 5 to 40 nm, and a binder (Paragraphs 209-212). The fine particles are subjected to a surface treatment by a coupling agent (Paragraphs 213-232). This coupling agent can be the same as those the instant application and thus, inherently would provide the same hydrophobitizing of the particles.

Regarding claim 2, Nakamura (Paragraph 265 and Figure 5c) teaches that the low-refractive index layer can have an overcoat layer that covers the unevenness of the surface of the low-refractive index layer and provides a continuous layer (renders the outermost surface smooth). The polymer of the overcoat layer is taught in Paragraphs 271-273. These polymers can also be present as binder in the low refractive index layer (Paragraphs 484-489) and thus, the laminate can have a layer comprising the binder and particles and a layer formed of said binder alone.

Regarding claim 4, since the particles have been provided with a hydrophobic surface treatment they would not be fully wetted with water.

Regarding claims 5 and 6, the binder resin of the low refractive layer is taught in Paragraphs 234-235 and includes ionizing radiation curing resins containing hydroxyl functional groups.

Regarding claim 7, Nakamura (Paragraphs 484-485) teaches that the low refractive index layer can have a fluorine or silicon series containing compound.

Regarding claim 8, Nakamura (Paragraph 488) teaches fluorocompounds that meet the limitations of the instant claim.

Regarding claim 10, Nakamura (Paragraph 498) teaches that a coating layer can be present in the voids of the low refractive index layer and can be a fluorine-containing silane (Paragraph 273) that meets the limitations of the instant claim.

Regarding claim 11, Nakamura (Paragraph 330) teaches that the contact angle with water of the surface of the side having the low-refractive index layer is preferably 90 degrees or more.

Regarding claim 12, Nakamura (Paragraph 243) teaches that the low-refractive index layer preferably has a refractive index of 1.30 to 1.55. This range overlaps the range of the instant claim.

Regarding claim 14, Nakamura (Paragraph 458) teaches that there can be a hardcoat layer between the base material and the low refractive index layer.

Regarding claims 16 and 18, Nakamura (Paragraph 501) teaches that the hardcoat layer can have anti-glare (anti-dazzling) properties.

Regarding claim 17, Nakamura (Paragraph 284) teaches that an antistatic layer can be provided on the transparent support.

Regarding claim 19, Nakamura (Paragraph 125 and Figure 1c) teaches that there can also be a middle-refractive index layer between the transparent substrate and the low-refractive index layer. The refractive index of the middle-refractive index layer is preferably 1.65 to 1.85 (Paragraph 187) and the layer has a thickness of 5-200 nm (0.005 to 0.2 microns) (Paragraph 189).

Regarding claim 20, Nakamura (Paragraph 280) teaches that an antistatic agent can be added to any of the layers or coating solutions of the anti-reflection film.

Regarding claim 21, Nakamura (Paragraph 125 and Figure 1 (c)) teaches that the laminate can have an overcoat layer provided on the low refractive index layer in the side remote from the base layer. The overcoat layer can be a stain-proofing layer (Paragraphs 490-491).

Regarding claim 22, Nakamura (Paragraphs 271-273) teaches that the overcoat layer can be formed from a crosslinked fluorine-containing polymer and can form a continuous layer on the low-refractive index layer (Paragraph 265). These materials include some of the same compounds that can be used as the binder of the instant application and thus, the behavior of the antireflective laminate of Nakamura to wiping with water or an alkaline liquid composition would inherently be the same as that of the instant application.

**Claims 1, 3-7 and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshihara et al. (JP 2002-079600).** The Examiner is using the

machine translation provided by Applicant for this Office Action. A formal English translation will be provided with the next Office Action.

Regarding claims 1 and 3, Yoshihara (Paragraph 6) teaches a low-refractive index layer coated on a glass or plastic substrate. The substrate is transparent (Paragraph 1). The composition is an anti-reflection laminate (abstract). The low-refractive index layer (Paragraph 7) comprises an ultrafine particle whose mean diameter is 5-100 nm and an acrylic compound (binder). The particles (Paragraph 22) can be treated with an organic silicon compound of formula A. The organic silicon compound A is taught in Paragraph 21 and has the form of a silane coupling agent. This coupling agent can be the same as those the instant application and thus, inherently would provide the same hydrophobitizing of the particles.

Regarding claim 4, since the particles have been provided with a hydrophobic surface treatment they would not be fully wetted with water.

Regarding claims 5 and 6, the binder resin of the low refractive layer is taught in Paragraph 20 and includes ionizing radiation curing resins containing hydroxyl functional groups.

Regarding claim 7, Yoshihara (Paragraph 27) teaches that the low-refractive index layer can also comprise a fluorine or silicon compound.

Regarding claim 12, the low refractive index layer has a refractive index of 1.45 or less (Paragraph 24).



Regarding claim 13, Yoshihara (Paragraph 16) teaches that the low-refractive index layer has a ten point mean roughness of 100 nm or less and an arithmetic mean roughness of 2 to 10 nm.

Regarding claim 14, the low-refractive index layer can further be laminated with a hardcoat layer (Paragraph 29).

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 15 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Nakamura et al. (US 2003/0202137).**

As stated above, Nakamura teaches an antireflective laminate that meets the limitations of claims 1 and 14 and has a hardcoat layer between the transparent substrate and the low-refractive index layer. Nakamura (Paragraphs 253 and 257) further teaches the polymers and fillers used to form the hard coat layer. The filler is added to the hard coat layer to adjust the refractive index and hardness of the layer (Paragraph 475).

Nakamura does not explicitly teach the refractive index of the hardcoat layer.

However, due to the refractive indices of the polymers and fillers, the materials of the hardcoat layer should provide coatings that meet the refractive index limitations of the instant claim or it would be obvious to one of ordinary skill in the art to vary the filler and filler loading to obtain a desired refractive index and hardness for the hardcoat layer.

***Claim Rejections - 35 USC § 103***

**Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. (US 2003/0202137).**

As stated above, Nakamura teaches an antireflective laminate that meets the limitations of claims 1 and 7. Nakamura (Paragraph 498) further teaches that a coating layer can be present in the voids of the low refractive index at less than 70% by volume. It is preferred to increase the molecular weight of the coating layer, in order to lower the volume percentage of the coating in the voids. The lower volume percentage is preferred, in order to preserve the refractive index of the low refractive index layer. This lubricating coating layer can be formed from a polyorganosiloxane (Paragraph 492).

Nakamura does not explicitly teach the values for m and n.

It would be obvious to one of ordinary skill in the art to choose the molecular weight (thus the values of m and n), in order to obtain a desired refractive index for the low refractive index layer, while still providing an external lubrication layer.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1, 3-5, 7-10, 12 and 14-21 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 11, 13-15 and 17-23 of copending Application No. 10/569,363.** Although the conflicting claims are not identical, they are not patentably distinct from each other because both claim an antireflective laminate comprising a light transparent base material with a low refractive index layer provided on the base layer. The low refractive index layers both comprise a binder and fine particles. The fine particles are coated with a coupling agent that would hydrophobitize the particles. While claim 1 of 10/569,363 does not explicitly state the average particle size of the particles, Applicants' attention is drawn to MPEP 804 where it is disclosed that “the specification can always

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be used as a dictionary to learn the meaning of a term in a patent claim.” *In re Boylan*, 392 F.2d 1017, 157 USPQ 370 (CCPA 1968). Further, those portions of the specification which provide support for the patent claims may also be examined and considered when addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in the patent. (underlining added by examiner for emphasis) *In re Vogel*, 422 F.2d 438, 164 USPQ 619,622 (CCPA 1970).

Consistent with the above underlined portion of the MPEP citation, attention is drawn to specification Paragraph 49 of 10/569,363 which discloses that the silica fine particles have an average diameter of 5 to 100 nm. Therefore, it would have been obvious to one of ordinary skill in the art to use these particle sizes of the silica fine particles and thereby arrive at the present invention.

Claims 1, 3-5, 7-10, 12 and 14-21 are directed to an invention not patentably distinct from claims 1, 11, 13-15 and 17-23 of commonly assigned 10/569,363. Specifically, although the conflicting claims are not identical, they are not patentably distinct for the reasons set forth above.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned 10/569,363, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35

U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References JP 2003-255103 and JP 2003-183592 cited in the International Search Report disclose antireflective laminates comprising transparent base materials with a low-refractive index layer comprising hydrophobitized fine particles having an average particle diameter that meets the limitations of the instant claims. However, References JP 2003-255103 and JP 2003-183592 are cumulative to the rejections of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Robinson whose telephone number is (571)272-7129. The examiner can normally be reached on Monday- Friday 8 AM to 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. R./  
Elizabeth Robinson  
Examiner, Art Unit 1794

August 27, 2009

/Callie E. Shosho/  
Supervisory Patent Examiner, Art Unit 1794